SHAKE LIGHTING KEY HOLDER

This invention relates to battery-powered lights and more particularly to a key holder provided with a light source that is activated for a time interval after being shaken.

BACKGROUND OF THE INVENTION

When a person is searching for keys that are in a container with many other items, it may be awkward and time consuming to find them. This is especially common when the keys are in a crowded purse, and the person needs to find the keys in a hurry.

US patent No. 6,601,967 issued 8/5/03 to Zeller discloses a battery-powered flashlight with key holder. The light is actuated when the user rotates a knob. This is only useful after the user has found the key holder.

US patent No. 5,400,232 issued 3/21/95 to Wong, and US patent NO. 5,465,197 issued 11/7/95 to Chien disclose vibration flashlights with a spring that at times closes a battery and light emitting diode circuit when vibrated. They are directed to attachment to clothing, shoes, etc. to make the wearer visible while active.

It would be useful to have a key holder with a battery-powered light that would light up by shaking the purse and remain lighted for a time interval after the shaking. The user could then more easily locate the shining key holder among all the contents of the purse. The user would not have to locate the keys while the purse is moving.

SUMMARY OF THE INVENTION

It is accordingly an object of the invention to provide a key holder that will light up when shaken and remain lit for a preset time interval thereafter to thereby enable the user to find the keys among all the items in the purse or other container. The user has only to shake the purse. The sensitivity of the device may be set so that the ordinary motion of the purse while in use will not activate the light circuit. This will prolong the life of the batteries. Use of a light emitting diode will further prolong battery life. The light may also be of use after the keys have been found, such as to find a keyhole. The device of the invention comprises a circuit including a battery and a light source in series with a switch. A second circuit comprises a vibration switch in series with the battery and the switch. When the vibration switch is shaken hard enough, the second circuit is completed. This actuates the switch. The switch completes the first circuit to

light the light source. The switch is a time delay holding switch, which remains closed for a preset time after actuation, and then opens.

These and other objects, features, and advantages of the invention will become more apparent when the detailed description is studied in conjunction with the drawings in which like elements are designated by like reference characters in the various drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of the key holder of the invention, partially broken away.

Fig. 2 is a schematic diagram of the circuit of the invention.

Fig. 3 is a sectional view of the vibration switch.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring now to the drawing Figs. 1-3, the invention comprises a key holding means 1 for holding one or more keys 17. The key holding means is connected to a housing 2. An opening 19 in the housing is covered by a transparent lens 18. Behind the lens within the housing is a light 6. This is preferably, but not limited to, a light emitting diode. A battery holder 3 holds a battery 20. First and second battery connections 4 and 5 connect the battery to the light source 6 through a circuit that includes a vibration switch 7 in series.

The vibration switch may take many forms well known in the art. As shown in Fig. 3, the switch comprises a conductive spring 62 having a captive proximal end affixed to conductor 66 held in insulated base 61. An enlarged distal free end 67 makes electrical contact with conductive cylinder 63 connected to contact 68 only when shaken a certain preset amount. A cap 64 seals off the mechanism from the elements. Conductors 66 and 68 are connected in the circuit and only close the circuit when the device is shaken hard enough for the spring end 67 to contact cylinder 63.. A holding element 16 with switch 21is energized when the momentary contact is made by spring 62. This maintains the closure of the circuit after the spring contact is removed. A time interval disconnect mechanism 15 is also energized by the spring contact. This holds a normally open switch 11 closed for a preset time. After that time interval, the switch 11 opens, and the light goes out. The time interval is selected to be long enough to enable the user to find the lighted key holder in a cluttered purse. It may be selected to be long enough to enable it to be used to find a keyhole in the dark, such as one minute or less. The short time interval and low power demands of a light emitting diode enable a small battery to supply the power needs

for a long time. The schematic diagram is by no means limiting, as the circuit may be more effectively produced in compact and economical form by semiconductor techniques.

While I have shown and described the preferred embodiments of my invention, it will be understood that the invention may be embodied otherwise than as herein specifically illustrated or described, and that certain changes in form and arrangement of parts and the specific manner of practicing the invention may be made within the underlying idea or principles of the invention.